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10/694,420	10/27/2003	Bryan David Haynes	KCX-1120 (19175)	3355
7590 Mr. Stephen E. Bondura Dority & Manning, P.A. P.O. Box 1449 Greenville, SC 29602			EXAMINER DANIELS, MATTHEW J	
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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

MAILED

Application Number: 10/694,420
Filing Date: October 27, 2003
Appellant(s): HAYNES ET AL.

**JUN 27 2007
GROUP 1700**

Steven R. LeBlanc
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12 February appealing from the Office action mailed 4 August 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

Art Unit: 1732

GROUND OF REJECTION NOT ON REVIEW

The following grounds of rejection have not been withdrawn by the examiner, but they are not under review on appeal because they have not been presented for review in the appellant's brief. **Claims 2-17.**

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,365,088	KNIGHT ET AL	4-2002
3,052,009	EPSTEIN ET AL	9-1962
WO 02/052071	HAYNES ET AL	7-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haynes (WO 02/052071) in view of Knight (USPN 6365088) and Epstein (USPN 3052009).

As to Claim 1, Haynes et al teach a process for forming a nonwoven web (abstract) comprising: (a) providing a source of fibers (fig 1 , 12), (b) subjecting said fibers to an electrostatic charge by passing said fibers through an electrostatic unit having a first side and a second side opposed to each other (fig 1, 18 & 22), wherein the electrostatic unit has an array of

Art Unit: 1732

protrusions on the first side (fig 1, 20), (c) collecting said fibers on a forming surface to form a nonwoven web (fig 1, 32).

However, Haynes is silent to (b) the second side of the electrostatic unit having an array of protrusions and (c) alternating the electrostatic charge from the first side to the second side and back to the first side.

(b) Knight teaches both the second side of the electrostatic unit having an array of pins in forming a nonwoven web (col 7 lines 3-7 & 42-45 & fig 4). Knight et al teach that charge bars may include plurality of sets of four pins then he shows an embodiment in figure 4 where two charge bars are that are opposed to each other.

(c) Epstein teaches alternating the electrostatic charge from one side to another and back to the first side (Figs. 7 and 8), and further that the particular placement and arrangement of electrodes is familiar to the ordinary artisan (3:39-44).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the methods of Knight and Epstein into that of Haynes to control filament distribution in order to apply an electrostatic charge on a substrate (Knight, col 7 lines 16-19) and in order to provide the ability to vary the crimp to produce greater softness (Epstein, 3:3-6).

Refer to the rejection of claim 1 for dependent claims with limitations involving both sides having an array of protrusions.

As to Claim 2, Haynes et al teach that the electrostatic charge generated between the array of protrusions of the first side and the array of protrusions of the second side and the array of protrusions of the first side and the array of protrusions of the second side are opposed to one

Art Unit: 1732

another one (fig 1, 22 & 20, also see claim 1 rejection). **As to Claim 3**, Haynes et al teach that the array of protrusions of the first side and the array of protrusions of the second side each comprise an array of pins (fig 1, also see claim 1 rejection). **As to Claim 4**, Haynes et al teach that the array of pins of the first side and the array of pins of the second side are recessed within a cavity of an insulating material such that the pins essentially do not extend beyond the insulating material (pg 13 lines 10-16, fig 2, 205, also see claim 1 rejection). **As to Claim 5**, Haynes et al teach that the fibers are provided by a melt spinning process and the fibers are substantially continuous fibers (pg 4 lines 25-26). **As to Claim 6**, Haynes et al teach that the continuous fibers are subjected to pneumatic draw force in a fiber draw unit prior to being subjected to the electrostatic charge (pg 4 lines 26-27). **As to Claim 7**, Haynes et al teach deflecting the fibers with a deflecting device prior collecting the fibers on the forming surface (fig 1). **As to Claim 8**, Haynes et al teach that the fibers are substantially continuous fibers provided by melt spinning and are subjected to pneumatic draw force in a fiber draw unit prior to being subjected to said electrostatic charge (pg 4 lines 26-27), the array of protrusions of the first side and the array of protrusions of the second side each comprise an array of pins (fig 1, also see claim 1 rejection), the electrostatic charge is generated between the array of pins of the first side and the array of pins of the second side and the array of pins of the first side and the array of pins of the second side are opposed to one another one (pg 4 line 19, also see claim 1 rejection). **As to Claim 9**, Haynes et al teach that the array of pins of the first side and the array of pins of the second side are recessed within a cavity of an insulating material such that the pins essentially do not extend beyond the insulating material (pg 13 lines 10-16, fig 2, 205, also see claim 1 rejection). **As to Claim 10**, Haynes et al teach deflecting the fibers with a deflecting device prior

Art Unit: 1732

collecting the fibers on the forming surface (fig 1). **As to Claim 11**, Haynes et al teach that the electrostatic charge is generated by a series of at least two separate electrostatic charge fields along a length of the electrostatic unit, each charge field having an array of protrusions on at least one of the first side or the second side of the electrostatic unit (fig 1, 18 & 22, also see claim 1 rejection). **As to Claim 12**, Haynes et al teach everything in claim 12 but do not teach the second side of the electrostatic unit having an array of protrusions. However, Knight teaches both the second side of the electrostatic unit having an array of pins in forming a nonwoven web (col 7 lines 3-7 & 42-45 & fig 4). Knight et al teach that charge bars may include plurality of sets of four pins then he shows an embodiment in figure 4 where two charge bars are that are opposed to each other. It would have been obvious to one of ordinary skill in the art at the time of invention to use the teachings of Knight et al in Haynes et al's method to control filament distribution in order to apply an electrostatic charge on a substrate (col 7 lines 16-19). **As to Claim 13**, Haynes et al teach that a first charge field is generated by the array of pins on the first side of the electrostatic unit and a second charge field is generated by the array of pins on the second side of the electrostatic unit (fig 1, 18 & 22, also see claim 1 rejection). **As to Claim 14**, Haynes et al teach that the first electrostatic charge field is generated between a first array of pins on the first side of the electrostatic unit and first array of pins on the second side of the electrostatic unit and a second electrostatic charge field is generated between a second array of pins on the first side of the electrostatic unit and a second array of pins on the second side of the electrostatic unit (fig 1, 18 & 22, also see claim 1 rejection). **As to Claim 15**, Haynes et al teach that the first electrostatic field is generated from a potential on the first side of the electrostatic unit and the second electrostatic field is generated from a potential on second side of the

Art Unit: 1732

electrostatic unit (fig 1). **As to Claim 16**, Haynes et al teach that the array of pins of the first side and the array of pins of the second side are recessed within a cavity of an insulating material such that the pins essentially do not extend beyond the insulating material (pg 13 lines 10-16, fig 2, 205, also see claim 1 rejection). **As to Claim 17**, Haynes et al teach that the electrical potential is alternated from the protrusions on the first side to the protrusions on the second side and back to the protrusions on the first side (fig 1).

(10) Response to Argument

Appellants argue on page 3 that there is no motivation to combine the references to obtain the claimed invention. Applicants further argue that instead, the rejection merely combines elements based on the hindsight provided by the claimed invention.

The Examiner responds that one would have been motivated to provide the alternating field of Epstein to the method of Haynes in order to incorporate the filament crimping and resulting softness of Epstein (3:3-8) into fabrics which are meant to touch the skin, such as socks (Haynes, page 12, line 10). With regard to the method of Knight, it is asserted that Knight teaches that various electrode configurations may be used interchangeably for charging fibers. For example, charge bars (7:1-3) and pins (7:7-15, acting as the claimed protrusions) are disclosed as interchangeable electrode means (7:1-5 and 7:41-45). Appellants' remarks do not assert that any unexpected results are to be achieved by replacing the plate or bar electrode of Haynes (22) with pin electrodes. Knight's disclosure of applying the charge to a web of material does not destroy the combination, and it is noted that in the methods of Knight and Haynes, the

charge is applied to fibers. The pin electrode device of Knight would provide improved filament distribution and charging to the method of Haynes.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, the knowledge which was within the level of ordinary skill at the time the invention was made (as evidenced by Haynes, Fig. 1, items 20 and 22) is that both plates (22) and pins (20) are useful as electrodes (page 12, line 14 to page 14, line 25). Knight provides similar teachings regarding the knowledge that was within the level of ordinary skill at the time the invention was made (Column 7, especially 7:1-5 and 7:42-45). As further evidence of the knowledge that was within the level of ordinary skill in the art at the time of the invention, the Examiner also cites Epstein's teaching at 3:42-44 that the "shaping and arranging of electrodes and electrode systems...is also familiar to any cathode ray engineer."

Appellants argue on page 4 that Haynes teaches applying an electrostatic charge to fibers to form a nonwoven web, while Knight teaches applying an electrostatic charge to an already formed nonwoven web.

It is submitted that Knight's teachings are pertinent and relevant for aspects relied upon, namely the interchangeability of various electrode types or configurations. Haynes teaches that

Art Unit: 1732

two electrodes types or shapes are used (Fig. 1, items 20, 22), and Knight teaches that these electrode types or shapes may be used interchangeably. The methods of Knight and Haynes are both used to treat fibers, and therefore it is submitted that the combination is valid despite Knight's treatment of nonwoven webs comprised of fibers.

On page 5, Appellants acknowledge Epstein's teaching that the shaping and arrangement of alternating electrostatic pulses is familiar to any cathode ray tube engineer, but argue that this teaching provides no motivation to modify the disclosure of Haynes to arrive at the claimed invention. Appellants further argue that the combination would only crimp an already formed nonwoven web.

With regard to the assertion that Epstein's process would provide crimping to a formed nonwoven web, it is noted that Epstein teaches that the process is performed on a fiber (Fig. 1 and 1:61-2:29), as provided by Haynes (Fig. 1, item 12). Epstein's method does not appear to be performed on a nonwoven web. One would have been motivated to provide the alternating field of Epstein to the method of Haynes in order to incorporate the filament crimping and resulting softness of Epstein (3:3-8) into fabrics which are meant to touch the skin, such as socks (Haynes, page 12, line 10).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Art Unit: 1732

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Matthew J. Daniels



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